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ABSTRACT

This paper attempts to provide a broad theoretical framework for understanding planning in organizations and other social systems; and it identifies the key conditions, processes, and structures of social systems in the planning concept. While other frameworks exist that detail singular aspects of planning as it actually occurs and describe planning as a normatively conceived process, it is assumed that those more detailed theories can be fitted into this general framework, potentially useful in analyzing particular cases. The content is organized according to (1) definitional issues, (2) framework for analyzing the planning potential of a social system, (3) implications of proposed framework for system analysis, (4) planning and organizations in relationship to the analytic framework, (5) organizational structures and processes involved in planning, and (6) conclusion. These sections move from definition to a general theoretical statement, and, finally, to the application of the theory to organizations. A bibliography is included. (Author)

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ORGANIZATIONS AS A SPECIAL CASE

James E. Crowfoot

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PLANNING AND SOCIAL SYSTEMS: ORGANIZATIONS AS A SPECIAL CASE*

James E. Crowfoot

This paper attempts to provide a broad theoretical framework for understanding planning in organizations and other social systems and identify the key conditions, processes, and structures of social systems in the planning concept. Other frameworks exist which detail singular aspects of planning as it actually occurs, and describe planning as a normatively conceived process. It is assumed that those more detailed theories can be fitted into this general framework which may be useful in analyzing particular cases.

The paper is organized into the following five main sections:

I. Definitional Issues, pp. 2-15.

II. Framework for Analyzing the Planning Potential of a Social System, pp. 16-24.

III. Implications of Proposed Framework for System Analysis, pp. 24-26.

IV. Planning and Organizations in Relationship to the Analytic Framework, pp. 26-38.

V. Organizational Structures and Processes Involved in Planning, pp. 38-53.

VI. Conclusion, pp. 53-54.

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These sections move from definition to a general theoretical statement, and, finally, to the application of the theory to organizations.

DEFINITIONAL ISSUES

The word "planning" has been used with varying degrees of preciseness to refer to a diverse group of phenomena. Morris, Binstock, and Rein have commented on this definitional history:

> The word currently connotes so many different kinds of individual and collective thoughts and actions that attempts to deal conceptually with the entire range of phenomena have resulted in considerable confusion (1966, p. 1).

Planning in this paper will be defined in relationship to a concrete social system. The definition is applicable to social systems of different types: e.g. nations, industrial organizations, urban governments, community organizations, etc. It is assumed that the social system is embedded in an environment and consists, at one level of abstraction, of subsystems and their interrelationships. It is assumed that the system is in some degree dependent on its environment and that this relationship involves adaptation of the system to its environment. At the most basic level, such a system consists of aggregates of human activities (events).

One possible approach to the definition of planning in a social system would be to assume that certain subsystems within a given system have planning as their primary task, and then proceed to characterize these subsystems. This approach has some face validity because it is commonly thought that planning in a social system is limited to a particular subsystem and can, in fact, be understood by focusing exclusively on this subsystem. It is true that examples can be identified where it

appears (in terms of system codes, norms, etc.) that planning is limited to discrete subsystems. It is assumed in this paper that planning cannot be adequately understood if consideration is constrained to discrete subsystems.

With this general orientation to definition, the term "planning" will be used primarily to refer to particular aggregates of human activities occurring in the context of identifiable social systems and which, in general, are not limited to particular subsystems. This approach to definition carries with it the difficult task of identifying particular aggregates of human activities in social systems as the precise referents for the term "planning." It is recognized that common sense language cannot be used as a very accurate guide to such designation. As a first step toward such identification, it should be noted that two broad classes of human activities are partially included in this aggregate which is the object of definition. These classes are decision-making and acting. Since all decision-making and acting in a social system are not included in planning, the problem becomes one of identifying those that are included. In making this identification, it also will be important to build bridges to existing definitions of planning to make clear the ways in which the proposed definition builds on, and moves beyond, existing work.

Friedman's definition of planning provides a first step in identifying this aggregate of human activities.

> Planning will be considered as the guidance of change within a social system. Specifically this means a process of self-guidance that may involve promoting differential growth of subsystem components (sectors), activating the transformation of system structures (political, economic, social), and maintaining system boundaries during the course of change (1967, p. 277).

The phrase in Friedman's statement which demands the most attention is "the guidance of change." This phrase raises such issues as:

1. Change with respect to what, and for what reason?
2. How in concrete terms is this change achieved in a social system?

The first question will lead us to focus on the system's embeddedness in the environment and the second on decision-making in the system.

An understanding of the use of the phrase "guidance of change" is aided by focusing on a social system's embeddedness in its environment. From this perspective:

> Adaptation is the crux of planning, although it is not its ostensible object. The ostensible object of planning -- a realized event -- happens from time to time as fall-out of the planning process which passes it by (Beer, 1964, p. 398).

Thus, a social system must cope with the uncertainty of its environment and this coping occurs through actions taken by system members with respect to particular objects. Beer's statement emphasizing the system concomitants of the "guidance of change," draws attention to two objects of planning:

1. The real object--continuous adaptation for survival.
2. The ostensible object--certain realized events which appear as fall-out of the planning process.

Ability to recognize these two quite different objects and specify with some preciseness when planning does or does not occur helps clarify the objects of planning.

Ozbekhan's (1969) recent work is helpful in gaining greater clarity on this matter. Two fundamental elements of Ozbekhan's definition of planning are:

1. Planning is to act <u>on</u> some object.

2. Planning is to act <u>on</u> some object <u>for</u> some purpose.

These two elements are directly related to the two objects of planning to which Beer drew attention. Ozbekhan, in relation to his two propositions, has developed a matrix specifying the occurrence or non-occurrence of planning under different conditions of "action on" and different conditions of "purpose for." The contents of this matrix make clear that the specification of the occurrence of planning is

"PURPOSE FOR" \ "ACTION ON"	NO ACTION	NON-DESIGNED ACTION (IMPULSIVE)	DESIGNED ACTION (RATIONAL)	DEFERRED ACTION (RATIONAL)
NO CHANGE	No Planning	No Planning	Planning occurs	Planning occurs
RANDOM (or NATURAL) CHANGE	No Planning	No Planning	1) Planning occurs, or 2) Lack of Control over obj.	No Planning
DESIGNED CHANGE	Planning occurs	No Planning	Planning occurs	Planning occurs
DEFERRED CHANGE	Planning occurs	No Planning	Planning occurs	Planning occurs

Ozbekhan (1969, p. 55).

most reliably related to planning's <u>real</u> object (continuous adaptation for survival) than to its <u>ostensible</u> object (certain realized events which appear as fall-out of the planning process). Therefore, under

conditions where there is no action with regard to particular objects, planning can be said to be going on if this lack of action grows out of design or deferral. It should be understood that Ozbekhan's use of the term "rational" assumes that rationality is relative to the aggregate of values of the system in question and not that rationality in itself is some sort of absolute across all systems.

Planning in Relation to Basic System Activities

In defining planning as an aggregate of system activities, it is important to understand the relationship of planning to fundamental classes of system activities. As pointed out earlier, one of the most important classes of system activities is that of decision-making. Attention to decision-making will lend specificity to the term "guidance," in Friedman's phrase "guidance of change." As Gross (1969) has pointed out, decision-making in systems is an endless sequential process which involves shifting from noncalculated or unconsciously calculated decisions to consciously calculated decisions. Such decision-making involves occasional calculations based on sophisticated models and calculations based on tacit, intuitive, or primitive models. What sort of decision-making is a part of planning? In other words, how is decision-making related to the general phrase "guidance of change" which has been used up to this point to describe planning?

Planning, to be completely defined, cannot be exclusively identified with decision-making but, at the same time, it does include decision-making within the aggregate of activities which are the concrete referents of this term. To understand how decision-making is a part of planning,

we review the work of those investigators who have focused heavily on the decision-making component of planning. Friend and Jessop have defined planning as a "process of strategic choice." They attribute the following meaning to this phrase:

> The word 'choice' is here used to embrace all areas of discretion whether or not they imply the formal commitment of a decision; the word 'process' is used to suggest the property of continuity over time; and the word 'strategic' is inserted to give at least a hint that we are dealing with a level of choice where difficult challenges are likely to arise from the various classes of uncertainty we have now identified, and where corresponding stresses are likely to develop within the decision-making system (1969, p. 97).

In focusing on planning in local governmental authorities, these authors specify three sources of uncertainty. They have identified uncertainty with respect to events in the environment U(E), with respect to other decision-making centers in the governmental organization U(R), and with respect to valueing U(V). They make clear that the core of planning (the process of strategic choice) is the exercise of discretion by system members in relationship to the uncertainty confronting the system.

Going beyond this point, they clarify in very precise terms the intricate interrelationship between processes of choice in general, and processes of choice which are a part of planning.

> ...any process of choice will become a process of planning (or strategic choice) if the selection of current actions is made only after a formulation and comparison of possible solutions over a wider field of decision relating to certain anticipated as well as current situations (p. 110).

Friend and Jessop are making clear that a characteristic feature of planning is that the exercise of discretion involves consideration of

possible solutions over a wide field of decision. By a wide field of decision they mean that the focal decision center in the case of planning chooses solutions after considering the actions and potential actions of other decision centers related to the action in question [i.e. an analysis of U(R)]. My own preference is for a stronger criterion for the exercise of discretion which is to be termed "planning." In my judgment, planning occurs when the exercise of discretion takes place along with the consideration of all three sources of uncertainty. By the consideration of uncertainty, I mean both the reduction of uncertainty through analysis as well as the acknowledgement of the existence of uncertainty which cannot be reduced because of resource scarcity.

The above distinction between planning and other decision-making contains within it the usual point made about routine vs. nonroutine decisions. In the case of routine decision, there is not the consideration of uncertainty which was discussed above. Rather, a known and established program of discretion is put into operation in order to reestablish certain conditions in a supposedly known causal sequence. The consideration of uncertainty which was described in the above paragraph is unique to the process of "guidance of change in a social system," as the phrase is being used in this paper.

There is also the typical distinction between decisions made and implemented on the basis of political behavior and decisions made for planned intervention which is not precise enough to distinguish which is taking place in a specific instance of choice behavior in a social system. By basing the differences between planning and other decision-making on

considerations of uncertainty, a step is taken beyond the impreciseness of the demarkation usually made between political behavior and planned intervention.

It is possible to further describe the relationship of planning to decision-making and, at the same time, specify more completely the kinds of activities involved in planning. This specification begins to make clear the types of activities which are involved in considering and operating in terms of the three sources of uncertainty mentioned earlier. Webber, in discussing city planning, stresses the relationship of planning to both decision-making and acting. He uses the term "planning" to refer to a special way of deciding and acting. He has stated five conditions as the minimum necessary conditions of the planning method:

1. The explication of goals, objectives, and targets for each subsystem under consideration including, in the public sphere, each of the publics that will be touched by the planned actions.
2. The continuous forecasting of both qualitative and quantitative changes that lie outside the planners' control.
3. The continuous forecasting of likely chains of consequences, within and especially among subsystems, resulting from each set of alternatively hypothesized planned actions.
4. The appraisal of investment costs and welfare payoffs attached to each alternatively projected history. If a reasonable fit is found between an hypothesized course of action and the value sets, a time-sequenced action strategy is synthesized, comprising shorter-run action tactics, each with its time targets. Each shorter-run tactic is carefully appraised for its likely net return, and is then expressed in the language of fiscal budgets.
5. The continuous monitoring of the systems being planned. A constant flow of information on actual outcomes is fed back into the planning system to signal forecasting errors and to actuate corrective steps. In addition,

> early warning of imminent danger or opportunity can alert deciders and, most important, the effectiveness of goal-directed actions can be empirically evaluated for each subsystem and each public (1969, p. 278).

Up to this point, planning has been defined as the aggregate of human activities related to the guidance of change within a social system. These activities have been placed in the context of system decision-making, much of which does not involve planning. The consideration of particular types of uncertainty was taken as a distinguishing characteristic. By means of Webber's five conditions, the general kinds of activities which go into the guidance of change within a social system have been identified. At this point, it is appropriate to point out several distinctions which are latent in Webber's five conditions and/or come up frequently in the discussion of planning.

1. Planning represents one way in which thought is fused with action in a social sytem. Brzezinski (1969) has called attention to this aspect of planning in describing planning activities in the U.S. State Department. Planning involves many kinds of thinking (Friedman, 1967a). Both rational and extra-rational thought can be involved. Both bounded and nonbounded rationality can have a place. Bounded rationality can be of the functional (rational with respect to means) or substantial (rational with respect to means and ends) varieties.
2. Planning involves concern both with explication of goals, objectives, and targets of actions, as well as work on the means for achieving such end states. This distinction

emphasizes the point that planning is not exclusively concerned with means while some other subsystem is concerned with goals.

3. Planning is a dynamic system process. In the past, planning has often been thought of in terms of the 'Soviet Model' where a blueprint for a desired future state was drawn up, together with the necessary steps to the achievement of that state. In this model, it was assumed that the plan could be literally carried out in full and the future state would thus be achieved. Planning, as defined in this paper, must include feedback to regulate or contain errors resulting from one's action.
4. Bauer (1967), among others, has made the point that planning demands a reasonably long-time perspective. This arises from the fact that action is carried out over time. Planning for such action demands a corresponding time perspective. The reassessment and readjustment of such action must likewise occur over time. The necessity for the time perspective specified here is assumed in Webber's specification of the role of forecasting in planning.
5. Planning, as the term is defined in this paper, demands a comprehensive perspective with respect to the system in question. Katz and Kahn (1966), in describing the major foci of different leadership levels in organizations, have made the point that top level decision-makers are responsible for taking a systemic perspective in their policy and decision considerations. Such a perspective has as its core the relationship between the total system and its environment. Miller and Rice (1968) have also

made this point with respect to the boundary spanning task of top management. The guidance of change within a social system demands a comprehensive (systemic) perspective.

6. Planning involves control and implementation. Webber makes clear the involvement of the planning subsystem in the development of action tactics, the monitoring of actual outcomes, and activation of corrective action when expected outcomes are not achieved. Bauer has pointed out the relation of planning to control and implementation in these words:

> Planning demands that the planner have reasonable confidence in his ability to control his own fate or, at least, that planning and relatively deliberate control will improve his prospects enough to be worth the cost. Finally, planning demands that one implement one's plans (1967, p. 180).

7. Planning is closely related to formal systemic information systems. System inputs can be classified in terms of two broad categories: energy and information. Planning primarily involves operations on the information inputs of the system, as well as seeking out information (from both outside and inside the system) not otherwise available from the formal information system.

From what has been said about planning up to this point, it is clear that planning (as an aggregate of activities) is integrally involved with other management functions (e.g., decision-making, control, information processing, etc.). Anthony (1967) in focusing on organizations has attempted to compare planning with management control in an effort to be clear how planning can be distinguished from other management functions.

The following distinctions are ones made by Anthony and are appropriate to the definition of planning that is being developed in this paper. These distinctions also involve information about the general nature of the structure of planning subsystems:

Characteristic	Planning	Management Control
Complexities	Many variables	Less complex
Degree of structure	Unstructured and irregular; each problem different	Rhythmic; prescribed procedures
Nature of information	Tailor-made for the problem; more external and predictive; less accurate	Integrated; more internal and historical; more accurate
Persons primarily involved	Staff and top management	Line and top management
Number of persons involved	Small	Large
Mental activity	Creative; analytical	Administrative; persuasive
Planning and control	Planning dominant, but some control	Emphasis on both planning and control
Time horizon	Tends to be long	Tends to be short
Appraisal of the job done	Extremely difficult	Much less difficult

In the past, different approaches have been taken to the task of defining planning. Planning has been defined with respect to a particular problem focus. Two often chosen foci are social planning (Morris, et. al., 1966), and economic planning (Colm, 1968). The use of these foci in defining planning usually leads to the nature of particular problems (with their sets of variables and attendant causal processes) being

relatively determinative in the analyses of planning which follow on these definitional efforts. Another approach to defining planning is to take as a focus the population being planned for and its relationship to the dominant power structure which allocates resources, etc. The work on advocacy planning is based on this approach to defining planning (Davidoff, 1965). The dominant factor in some definitions of planning is the type of social unit in which the planning occurs. Corporate planning illustrates this approach to defining planning (Steiner, 1963), as does urban planning (Bolan, 1968).

Urban Planning as an Illustration of Definitional Issues

The case of urban planning can be cited as an example of the traps that are encountered in defining planning with reference to a particular social system. The definition of urban planning generally has an essential, if not identifying, component--the notion of comprehensiveness with respect to the urban system. John Friedman (1969) has recently made a trenchant critique of the concept of urban planning which has as its core component the notion of comprehensiveness. This critique takes into account the nature of the urban system and the evidence from the recent past as to the planning that has occurred in this system. Friedman argues that the concept of comprehensive urban planning is an abstract notion that is not congruent with reality and one that urban planners would best be rid of. As a new definition of planning he proposes, "the linkage of a scientific-technical intelligence to organized societal action." To avoid confusion, his preference is to call this relation, as applied to problems of the city, "urban policy

analysis." Friedman's critique calls attention to an historic weakness in the definition of planning developed by those concerned exclusively with urban planning. At the same time, Friedman's reaction goes to an extreme that drops "comprehensiveness" as an important characteristic of planning.

It should be clear at this point that it is possible to define planning in any particular kind of social system in a way that is consistent with the general definition developed in this paper. Branch's definition of corporate planning is an example of a definition made with respect to a particular kind of social system that, in general, is consistent with the definition proposed earlier.

> The basic task of corporate planning is to visualize the enterprise as it could be five to ten years hence. The projective formulation embodies objectives appropriate to the environment forecast for this future time. It represents a series of achievements projected for the intervening years that are feasible extensions of the company's present condition, and which relate realistically to the changes in its external environment expected during the period of attainment. To this end, the business organism is extrapolated into successive stages in future time in accordance with its past, present, and desired development. From this projective examination a spectrum of objectives ranging from near term to long range are adopted and a series of actions derived to achieve them. This process is repeated periodically and objectives and plans are modified as required. Key elements and significant indicators -- such as income, return on investment, sales per employee, the ratio of administrative to direct production costs, and employee-separation rate -- are observed constantly for internal variances and trends which call for readjustment. External developments related to general economic conditions, technological advances, consumer and customer habits, competition, and many other factors external to the business organization are followed, since they may cause revisions in planning at any time (1966, p. 218).

FRAMEWORK FOR ANALYZING THE PLANNING POTENTIAL OF A SOCIAL SYSTEM

While this paper takes planning in organizations as its major focus, it is essential to understand this phenomena as a special case of the more general topic of planning in social systems. To understand the most general case would allow one to relate what is known about planning in national and urban systems to the problem of planning in organizations and vice versa. The more general understanding should also stimulate research on generic issues with regard to planning, as opposed to research that inadvertently concerns itself with relatively idiosyncratic matters or takes an approach which impedes meaningful generalization.

As is the case in general systems theory, it is difficult to formulate and validate hypotheses across such diverse social systems. It would be ideal to be able to formulate such hypotheses and then move to derive specific hypotheses with respect to different types of social systems. Such a venture is beyond the scope of this paper and, I also suspect, the current state of knowledge about these systems and about planning. An alternative which still uses the most general case as a starting point is to describe some basic assumptions which pertain to both the general phenomena as well as organizational phenomena which are the focus of this paper.

A comprehensive understanding of a social system requires knowledge of each element of the following set (Emery and Trist, 1965). In this set, L designates a potentially lawful connection, and the suffix 1 refers to the system and the suffix 2 to the system's environment.

$$L_{11} \quad L_{12}$$
$$L_{21} \quad L_{22}$$

In this notational scheme, previously used by Emery and Trist (1966) and Terreberry (1968), L_{11} refers to processes within the system; L_{12} and L_{21} to exchanges between the system and its environment, and L_{22} to processes by which parts of the environment are related to each other.

The set of interdependencies designated by the four elements L_{11}, L_{12}, L_{21}, and L_{22} exists within some set of parameters which represent limits to the multiple functions which are the substance of each of the four elements. These parameters are determined by the nature of the conditions within the system and in the system's environment. From the perspective of an actor within the system, these parameters (of each of the four elements L_{11}, L_{12}, L_{21}, and L_{22}) represent both constraints and opportunities for the system. In other words, these constraints and opportunities arise from the nature of the environment, the technology involved in system throughput, and the social technology involved in the human organization of the system. One of the main ways the constraints and opportunities have their effects is in relation to choice (or problem) situations in the system. As defined earlier, planning is an aggregate of activities of a particular kind which occurs in relationship to choice situations having particular characteristics. How such choice situations are detected and defined in social systems is a complex and little understood phenomena.

In the light of this cursory analysis of the sources of system constraints and opportunities and their relationship to choice situations, a number of assumptions can be made which are important to understanding planning in social systems.

1. It is assumed that these opportunities and constraints (which are the manifestation, in choice situations, of the parameters operative on L_{11}, L_{12}, L_{21}, and L_{22}) provide very different settings within which planning can occur.
2. A second and closely related assumption is that these differences in setting are major determinants of the capacity of a system to support planning activities. These assumptions have been made previously with regard to nations viewed from a systemic perspective (Friedman, 1967b). This statement of the assumptions extends their applicability to social systems in general.

On the basis of these assumptions, one would expect to find in looking at different social systems in their environmental contexts very different situations within which planning occurs or could potentially take place. While these assumptions seem to have an apparent validity, people involved in planning do not generally consider these assumptions. As an example of the lack of a perspective which rests on these assumptions, Bolan (1967) has pointed out that the city planners have been prone to get locked into a single planning style (comprehensive or master planning) rather than recognizing the unique settings in which they were planning and adjusting planning to fit the setting. Dalton, Barnes, and Zaleznik (1968) have collected data on a research and development organization which illustrates a specific organizational failure to take into account these assumptions. This failure in putting planning into place had serious negative consequences for a planned organizational change.

These assumptions as stated do not include any evidence for their reasonableness nor any explanation of the dynamics of their operation.

This paper aims to concretize and explicate these assumptions for one particular type of social system, i.e. organizations. Development and support of these assumptions could also be made with respect to urban and national systems although that task lies beyond the scope of this paper.

Before focusing on organizations, it is meaningful to think about the characteristics of the social systems and their settings which affect the system's capacity to support planning activities. On the basis of the definition of planning developed earlier, it is necessary to specify the system characteristics which would facilitate the occurrence of planning. Second, it is necessary to specify a dynamic model of social system process to which these conditions can be related. This dynamic model should be the sort that can be critiqued in terms of its validity as a description of the operation of actual social systems.

What are the system and system environment characteristics which are conducive to the occurrence of planning? In analyzing national planning in developing countries, Bauman (1967) has set forth a notion of five requisites of "perfect planning" which can be understood as conditions conducive to the occurrence of planning. I prefer to think of these requisites in this way because of the lack of intelligibility of the concept, "perfect planning."

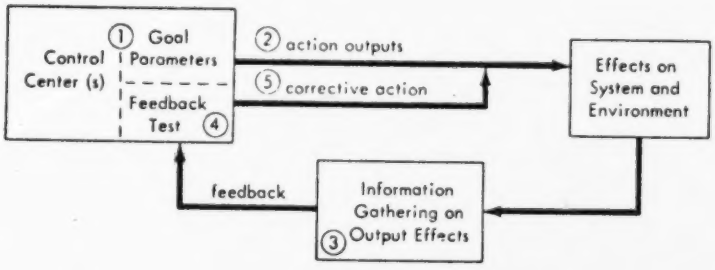
1. Resource self-sufficiency -- This condition calls for the availability of all the conceivable resources necessary to perform activities specified by the plan. Furthermore, these resources must be manipulative according to decisions made by the planning agent.

2. Perfect information -- This condition requires that all possible information important and valid from the point of view of the content of the plan be in possession of the planning agents. Such information involves the possible use of resources and the technology for using them.
3. Perfect rationality by planners -- This condition requires a planning agent with motivations identical to pre-established goals, competence with respect to cognitive capacity and conceptual skill, reliable knowledge, and executive power. Further, this condition requires that the alternatives among which selection is to be made are reducible to a common denominator.
4. Social homogeneity -- This requirement specifies that there not be events which are at the same time beneficial to one part of the system and harmful to another.
5. Perfect control -- According to this condition, there must be nothing between the planning agent and elementary units of behavior which does not derive its decision-making or executive power merely from the delegation by the planning agent. If this condition is met, there are no places, outside of the planning agent, for autonomous sources of power and influence.

It is important to note that these five conditions are related to both the internal nature of the system and the nature of the system's environment. The first two conditions involve the system's relationship to its environment. The last three conditions have to do primarily with the internal nature of the system. This brief statement of the relationship

of these conditions to the general nature of systems is not as precise as might be desired. Increased precision could eventually be achieved by relating the five conditions to the four different types of lawful connections, referred to earlier, involving the system and its environment (L_{11}, L_{12}, L_{21}, and L_{22}). This degree of preciseness, while desirable, lies beyond the scope of this paper.

Having specified five conditions conducive to the occurrence of planning, the question remains as to the sort of model of social system process for applying these conditions. Modern systems research supplies such a model in the cybernetic model of explicit goal seeking. Buckley has outlined this model in the following figure.



Buckley (1967, p. 173)

Buckley distinguishes five stages of this model:

1. Desired goal parameters and means for achieving goals are established by the control center.
2. Administrative bodies convert goal decisions into action outputs. These outputs bring about certain effects on the system and its environment.

3. Information about these effects are recorded and fed back to the control center.
4. The new state of the system is tested against the desired goal parameters. This measure of deviation occurs at the control center.
5. In case there is error beyond the limits allowed by the goal parameters, corrective output action is taken by the control center.

It is possible to apply the five conditions, outlined earlier, to this model of social system process. In fact, in much common thinking about this process model, these five conditions, or some subset, are taken as given. Taking these characteristics as given assumes that they characterize social systems. Buckley notes this state of affairs and the over simplification which it reflects.

> ...Such a model seems valid as a generalized picture of what tends to occur in group goal-seeking, or what would (or perhaps should) occur were it not for "complicating factors;" but these complicating factors are just what prevents the analyst from easy use of the model (1968, p. 174).

Buckley's treatment of these complicating factors is important evidence of the absence of the five conditions in actual social systems. He questions whether there is a single control center in the system that (validly) can be taken as a unified focus of goal decisions and which alone has significant effects on the stage of the system or its environment. In the case of government, this question is answered in the negative.

> Governments, for example, often set goals that are not much more than expressions of general societal values, making it difficult to specify the concrete criteria used

> to inform us of error or success; they avoid establishing preference scales for different goals or even questioning whether some are incompatible with others; and means chosen often appear to have little relation to the ends sought. And then there is the question of whether we dare assume that the main outputs into a social system always, or even usually, stem from central decision-makers in the first place. Here we raise the problem of the role of planned, purposeful goal decisions relative to the aggregate of large numbers of individual and group goals decisions that may be more determinative of the state of the system at any time. Is the feedback model relevant only to societies or organizations with a high degree of centralized planning? (pp. 174-175).

He makes the point that in real social systems there is not an automatic and unfailing transformation of decisions into final actions. Furthermore, he makes the point that, as of now, there does not exist a refined assessment of most social, psychological, and cultural features of a society or complex organization. The absence of such an assessment is partially due to the reluctance of systems to seek the negative consequences of their decisions. In reality, it is difficult to relate pieces of feedback to particular goal outputs. This difficulty relates to the lack of goal specification as well as to the complexity of the causal linkages among the variables involved in the output. It cannot be assumed that corrective action in response to feedback is automatically forthcoming. In some cases, what is indicated by feedback is the necessity of changes in structure of the sociocultural system.

As a result of his assessment of this model, Buckley concludes:

> It [the model] should be explored much more fully, but with caution and moderate expectations in the short run. It may not be especially applicable to society at present primarily because the controllers of contemporary societies have hardly discovered its applicability (p. 176).

Others besides Buckley have been aware of the limitations of this model. Friedman's (1967) insights on the model are particularly interesting

because they are made with direct reference to planning in a concrete social system. He maintains that the relative influence of the technical planning function in a system depends upon:

a. clarity of system objectives.

b. the extent of consensus about the objectives.

c. the relative importance which politicians attach to the objectives.

d. the degree of variance relative to objectives which is expected in the performance of the system.

e. the extent to which a technical (as contrasted to a purely political) approach is believed capable of making system performance conform with these objectives.

IMPLICATIONS OF PROPOSED FRAMEWORK FOR SYSTEM ANALYSIS

In considering the capacity (realized or potential) for planning in any social system, it is possible to examine the system in terms of this model under the five specified conditions. Obviously, no existing social system perfectly meets the characteristics of this model under these five conditions. But what is relevant analytically is the degree to which social systems in general and in particular operate in ways congruent with this model and have characteristics matching the five which have been specified. The relationship of actual social systems to this analytic framework raises the following important questions:

1. What in the nature of social systems -- the fact of their human components and the interaction of these components -- is incompatible with this model and these five conditions?

It would be expected that, in answering this question, one would have to deal, for instance, with the limitations of human rationality, etc.

2. What in terms of this model and these characteristics are the particular opportunities for and constraints on planning in particular types of social systems (e.g. urban, industrial organization, private social welfare subsystem of an urban system, etc.)? This question goes beyond the basic character of all social systems to the specific characteristics of particular types of social systems.
3. Within any particular type of social system at a given time, what are the important variances with respect to this model and these five characteristics? This question is related to the assumption that on these characteristics there are differences in systems of a given kind which are central to the systems' capacities for planning.
4. In particular types of social systems, what are the specific structures and processes that are important for understanding these five conditions? This question assumes that there is much more to be learned about a particular type of social system's capacity for planning. This necessitates a more specific analysis of system operation than is described by the general model and characteristics outlined earlier. An example in the case of U.S. federal agencies is the various processes and structures that have been worked out with respect to Congressional resource allocating procedures that differentially affect an agency's resource independence.

5. Within any given type of social system, what are the differences in the identifiable social technologies with respect to the model and the five characteristics? This question is closely related to question three. The stress, in this question, is put on social technologies which vary over time, rather than on particular systems at a given time. This question also stimulates thinking in terms of the invention of technologies in relation to this model and these five conditions.
6. Within the limitations of a particular type of system and the variances among different systems of this type, what social technologies (in terms of structures and processes) capitalize most fully on a system's capacity for planning?
7. Do these social technologies in any way assume characteristics which are in disagreement with the five characteristics originally developed by Bauman? This question recognizes the possible limitations of these five characteristics. Such limitations might be that one or more of the five characteristics is in error, or that the set of five is incomplete.

PLANNING AND ORGANIZATIONS IN RELATIONSHIP TO THE ANALYTIC FRAMEWORK

With this general approach to social systems, I want to consider organizations as a particular type of social system. In focusing on organizations, I want to attempt to answer questions two, three, and four from the above list. To do this necessitates examining the following topics:

1. How organizations in general are related to the five specified conditions and how they vary with respect to these conditions.

2. The particular processes and structures in organizations that must be considered in relating the model and the five conditions to this type of social system.

Recent work in organizational theory makes an important contribution to determining the ways in which organizations do and do not meet the five conditions conducive to planning. Thompson (1967) has described two fundamental models that underlie most of the literature on complex organizations. The earlier of the two is the rational model which is based on a closed system strategy, and the more recent is the natural system model which presumes an open system strategy. Thompson asserts that each of the two models describes adequately some aspects of organizations but that neither alone provides a full understanding of complex organizations. Thompson's own approach, and one with which I am in agreement, conceives of organizations as open systems, indeterminate and faced with uncertainty, but subject to criteria of rationality and, therefore, characterized by determinateness and certainty. This theoretical conception of organizations makes it clear that the conditions necessary for perfect planning are not fully present nor totally absent in organizations.

In order to understand how this conclusion can be made, it is important to relate the conclusion to basic concepts describing organizations. Two central concepts are technology and environment. Technology or technical rationality (Thompson, 1967) exists to the extent that activities dictated by man's beliefs are judged to produce desired outcomes. The state of knowledge at a given time, with respect to the relation between a desired outcome and the necessary instrumental action

to produce it, determines the content of technology. As a logical system of cause-effect relations excluding all exogenous variables, technology is an abstraction. As actual processes (physical, etc.) and as exogenous variables are considered, technology ceases to be an abstraction and the variables and their pattern of relationship involved in the process deviates from the strict cause-effect abstraction. Thompson has pointed out that, while technical rationality is essential to organizations, organizational rationality is also important. Organizational rationality includes the acquisition of inputs and the disposition of outputs. These processes involving inputs and outputs move beyond the organization to bring into focus the environment of the organization.

In simplest terms, the environment is what lies outside of the organization. In a particular case, the determination of where the organization leaves off and the boundary begins is a difficult one (Smith, 1969). Such determination gets into questions concerning organizational boundaries which lie beyond the scope of this paper. The domain of the organization defines the points at which an organization is dependent on the environment (Thompson, 1967). These points of dependency are determined by the technology included in the organization, the population served, the services rendered, etc. Cyert and MacCrimmon (1968) have conceptualized the organization's domain in terms of three levels. The first level is the aggregate level. This level includes the organization's economic, technical, and sociocultural climates. In most cases, the organization has little influence on the aggregate level of its environment. The second level is referred to by these writers as

the intermediate level. This level includes rival organizations, complementary organizations, and organizations with the same members. The organization is capable of influencing these other units in the intermediate environmental level. The third level is the individual level. This level includes the individuals who are clients of the organization, potential employees, etc. Although Cyert and MacCrimmon don't include them, organizational members can also be seen as elements of this level of the organization's environment. Inclusion of organizational members in this level is consistent with an understanding of organizational members as only partially included in the organization.

With these basic organizational concepts in place, it is now possible to treat more specifically the issue of the relationship between the five conditions conducive to planning and the operating conditions of organizations. Organizations differ quite widely in their resource self-sufficiency. No modern organizations are fully self-sufficient with respect to resources. It has been observed at a descriptive level that industrial organizations generally have a greater resource self-sufficiency than most community organizations (Katz and Kahn, 1966). Recently, detailed theoretical and empirical work has been done on the issue of organizational resource acquisition. Basically, Michener's (1968) theory states that the greater the organization's power over the environment and the less the environment's power over the organization, the greater the resource self-sufficiency of the organization. He specifies four general conditions which determine the level of resources procured by an organization:

1. To what degree environing units value outcomes mediated by the focal organization.
2. The number of alternative sources of valued outcomes available to environing units.
3. To what degree the focal organization values or requires outcomes mediated by environing units.
4. The number of alternative sources of valued outcomes.

On the basis of this theory, Michener gathered organizational data showing the relationship between these four conditions and the level of organizational resource acquisition. This research was carried out on Girl Scout Councils (organizations which pursue similar goals but which differ in the quantity of resources they obtain from their respective environments).

Existing knowledge permits the conclusion that there are differences among types of organizations with respect to their resource self-sufficiency and that within a particular type of organization, there are also differences on this dimension. Since this is one organizational condition that is important to the capacity for planning, it is justifiable to say, on the basis of this condition, that there are differences in organizational capacity for planning. However, it is an oversimplification to hypothesize that organizational resource self-sufficiency is directly related to organizational capacity for planning.

In order to further examine the relationships between the five system conditions conducive to planning and what is known about organizations, we turn now to the issue of the rationality of planner-decision makers and the quality of information used by the occupants of these

roles. Whyte (1969) has outlined the standard approach to organizational decision-making in the following terms:

1. In scanning one's environment, a discrepancy between what is and what one conceives to be normal or standard is perceived, and a problem is thereby formulated.
2. Information is acquired (implies searching the environment and/ one's memory).
3. The problem may be redefined.
4. Information that is gathered is ordered into alternative solutions.
5. A review of the applicable goals indicates the criteria to be used in evaluating the alternative solutions.
6. The alternatives are evaluated in terms of the criteria, and a choice is made.
7. Implementation of a solution is effected.

It is important to understand the varying assumptions which can be attached to this conceptualization of decision-making. Often in the past, the underlying assumptions attached to this conceptualization have been those of "rational man." This model of man assumes that (1) all alternatives of choice are "given," (2) all consequences attached to each alternative are known, and (3) rational man has a complete utility ordering for all possible sets of consequences (March and Simon, 1958). March and Simon (1958) have pointed out that the assumptions of rational man are inappropriate to the decision-making that occurs in organizations. It is important that organizational rationality always be recognized as essentially subjective since it is always relative to the perspective of

a particular actor or group of actors. Building on this understanding of rationality in organizations, March and Simon (1958) have developed two fundamental assumptions concerning rational choice:

1. Choice is always exercised with respect to a simplified model of a given situation.
2. Elements in the definition of a situation are not given but are themselves the outcomes of psychological and sociological processes. Both of these assumptions are built on a recognition of the cognitive limits of man and the limits of information gathering and processing in organizations.

From this brief review of what is known about decision-making in organizations, it is clear that the perfect rationality of the planner (one of the five conditions conducive to planning) is incongruent with the actual conditions of planning decision-making in organizations. Rather, the condition that exists is one of limited or bounded rationality.

There is good evidence from the study of organizational behavior that organizations vary with respect to the rationality of decision makers (both those involved in planning and those that are not). This variance is due to intrapersonal and interpersonal factors and to structural features. Argyris has theorized:

> To the extent that individuals dedicate themselves to the value of intellectual rationality and 'getting the job done,' they will tend to be aware of and emphasize the cognitive, intellectual aspects of the interactions that exist in an organization and (consciously or unconsciously) suppress the interpersonal and emotional aspects, especially those that do not seem relevant to achieving the task.
>
> As the interpersonal and emotional aspects of behavior become suppressed, we may hypothesize that an organizational norm will tend to arise that coerces individuals to hide their feelings (1964, pp. 100-101).

Following on this earlier work, Argyris (1965) investigated the way in which interpersonal competence facilitates or inhibits intellective, technical competence. Interpersonal competence, as developed by Argyris, involves individual predispositions (e.g., openness), interpersonal behaviors (e.g., help others to be open) and organizational norms (e.g., trust). As a result of research in three organizations involving over 100 problem-solving and decision-making meetings, interpersonal competence was found to vary and to have predictive validity. On the basis of this research, a change program was developed:

> ...from the research, it was learned that the men were highly oriented toward cognitive rationality, and they tended to suppress feelings and emotions. This suggested that one of the important lessons that must be gained during the change program is that feelings and emotions may have a very strong influence on cognitive rationality (1965, p. 127).

In one organization, he implemented an intervention with the board of directors that focused as closely as possible on surface behavior. An evaluation of this intervention showed that the board's problem-solving processes were enhanced.

This work by Argyris demonstrates that the "rationality" of organizational decision-making groups varies and can be changed. In the context of this paper, Argyris' statement of the potential generality of these findings is important:

> This analysis applies to research divisions of organizations, but I believe the factors can operate with respect to 'planning devisions' or with respect to whatever organizational subsystems has as its central mission the development and utilization of the new 'rationalizing technologies' (1965, p. 195).

Some students of organizations have recognized the importance of the relationship of structural features to the exercise of rationality by

organizational decision-makers. Investigations of the feedback processes between an organization and its environment have called attention to boundary spanning roles which provide a buffer for organizational decision makers (Rosenthal and Weiss, 1966). Such buffering is necessary to dampen the impact of immediate, impulsive, affective-evaluative data in order that organizational decision-making be highly influenced by technical rationality. A recent study of a large university documents how changes over time in such structural feature affected the quality of decision-making and certain organizational characteristics thought to be related to decision-making (Demareth, et. al., 1967).

Up to this point, the treatment of rationality in organizations has been most applicable to planning decision-making involving means to already determined ends. We now focus attention on the goal-setting process in organizations. There has been a tendency in organizational study to take organizational goals as given and to consider subgoals as following almost automatically from the overall goals. Cyert and March (1963) and Perrow (1961) have offered a model of goal-setting which appears to be more congruent with what actually occurs in organizations. According to this model, goals are arrived at through the competition of competing coalitions in the organization. This model highlights goal-setting as a process permeated by factors not necessarily wedded to rationality (relative to perspective of the total system) and, in fact, factors which to some degree mitigate against rationality.

Furthermore, this model makes clear the lack of social homogeneity in organizations. This is true even in industrial organizations which, in comparison to other types, have a high degree of homogeneity.

Perrow (1961) points out that operative goals will be shaped by the dominant group. These goals will reflect imperatives of the most critical task area, background characteristics of members (based on training, socio-economic class, etc.), and unofficial use to which they put the organization for their own ends. This feature of organizations is in contrast to social homogeneity, one of the five conditions specified earlier as conducive to planning.

There is an abundance of theoretical information and empirical data pertaining to the variance in social homogeneity of organizations. Rein (1969), in describing the strategies of legitimacy of the social planner, indicates that the representational base of an organization is a crucial area of variance. He theorizes that the broader the base the more likely that innovation will be foresaken in favor of maintaining a consensus on which divergent interests can agree. In organizations where priority is put on maintaining consensus, planning activities have less influence on decision-making. Although involvement of various organizational interest groups will facilitate legitimation of organizational directives, this involvement impedes innovation at the same time.

Lawrence and Lorsch (1967) have gathered data from three different types of industries which show the differences in integration and differentiation among plants of each of the three types, and among the plants in each industry. The differentiation that they investigate arises from division of labor with respect to task, but it illustrates how the interests of the members of different subsystems follow from features of this division of labor. It can be argued that there are other bases

of social solidarity in these plants and, thus, sources of social heterogeneity which these researchers have not investigated. At any rate, the Lawrence and Lorsch data represent solid evidence of organizational variance with respect to the condition of social homogeneity.

It is also clear that there is neither perfect nor complete information in an organization (Rosenthal and Weiss, 1966). Even in terms of the existing amount of information, only some subset of this information is perceived, gathered, communicated, processed. Operations on information are costly in terms of organizational resources. In addition to these limits on amount of information, the information used is not passive or neutral. Cyert and March have said:

> Individuals will treat estimates, information and communication generally as active parts of their environment. They will tend to consider the decision for which the information is relevant, the probable outcomes of various possible biases in information, and the payoff to them of various possible decision results. They adjust the information they transmit in accordance with their perceptions of the decision situation (p. 75).

This indicates that the amount of information is not unrelated to the organization's social homogeneity and the level of rationality characteristics of the organization's decision makers.

Organizations vary with respect to their capability of information gathering and processing. Variance on this variable is particularly evident in the case of voluntary organizations. Historically, the capability of voluntary organizations in this area has been rather limited. Pressures due to change in the organizational environment have thrust to the forefront decision problems requiring information input for which these organizations are not equipped. Some of these

organizations are in the process of developing new capabilities in this area (Kahn, et. al., 1966). At the same time, other voluntary organizations are attempting to resolve these new decision problems without the needed information gathering and processing capability. Gross variance in this variable could also be detected by comparing industrial organizations having similar core technologies with respect to the number of man hours per-month spent in boundary-spanning activities.

Extensive work has been done showing that the actual control existing in organizations is by no means a maximum relative to the desires of some organization members, nor relative to the images of possibility held by the designers of organizations. Extensive data exist showing the discrepancy between the amount of control desired by organization members and the degree of control which exists in organizations (Tannenbaum, 1968). Data of this kind cover voluntary organizations, business and industrial organizations, secondary schools, and graduate academic programs. Organizational designers have developed normative theories of organization which have as one element increasing by various means organizational control in order to improve organizational effectiveness (Likert, 1961; Odiorne, 1965).

Precise empirical evidence shows that organizations differ with respect to total amount of control as well as the distribution of control (Tannenbaum, 1968). Much theoretical work has been done in the area of different structures for achieving organizational control (Morse and Reimer, 1956) and in the area of psychological analysis of the complexities of the operation of control with respect to the individual (Katz, 1969).

The above analysis has related specific generalized knowledge of organizations to the five general system characteristics, identified earlier as conducive to planning. This analysis has shown that, in the case of organizations, the five conditions conducive to planning are not fully present. In making this case, key foci of organizational study were brought into play (e.g., resource interdependency, rationality in decision-making, differentiation-heterogenity, etc.). In addition, it was shown that organizations vary with respect to these five conditions.

ORGANIZATIONAL STRUCTURES AND PROCESSES INVOLVED IN PLANNING

Having examined organizations in general in relation to the five system conditions conducive to planning, we move now to describing a conceptualization of organizations that can be used to identify some of the central processes and structures involved in planning. This conceptualization and supporting materials are intended to fulfill the following objectives:

1. Provide a framework describing organizational functioning at a level of generality that serves as a context for understanding planning in a variety of organizations.
2. Provide an introduction to key topics related to the conceptual framework to aid in a fundamental understanding of organizations.
3. Provide conceptual support for understanding a change over to planning on the part of an organization. Such support is only one element of the perspective necessary for understanding the general dynamics of organizational change.

In order to understand planning as an organizational activity, it is helpful to place this activity in the context of the general types of organizational subsystems. Katz and Kahn (1966), in building on the work of Talcott Parsons, have described five such generic subsystems:

1. Production subsystems concerned with the work that gets done.
2. Supportive subsystems of procurement, disposal, and institutional relations.
3. Maintenance subsystems for tying people into their functional roles.
4. Adaptive subsystems concerned with organizational change.
5. Managerial systems for the direction, adjudication, and control of the many subsystems and activities of the structure.

Adaptive and managerial subsystems are of primary importance in understanding the place of planning in an organization. The adaptive subsystem of the organization recognizes the fact that the organization exists in an environment which includes changing cultural norms, changes in political power, changes in technology, etc. In order that the organization continue to procure inputs, operate its throughput process and dispose of its output, it is necessary for the organization to monitor, adjust to, and attempt to influence its environment. In the words of Katz and Kahn,

> In most formal organizations there arise, therefore, structures which are specifically concerned with sensing relevant changes in the outside world and translating the meaning of those changes for the organization. There may be structures which devote their energies wholly to anticipation of such changes. All these comprise the adaptive subsystem of the organization and bear such names as product research, market research, long-range planning, research and development, and the like. (1966, p. 42).

Whatever its structural embodiment in the organization, long-range planning as an activity is, in part, one aspect of the adaptive subsystem of the organization. It is important in seeking to understand the role of long-range planning in particular organizations to be able to relate this activity to other activities in the organization which fall within the adaptive subsystem. Generally, long-range planning is an activity which develops relatively late in time as compared to other adaptive subsystem activities.

A full understanding of the adaptive systems of organizations demands a knowledge of organizational environments and the relationship between organizations and their environments. These topics have only recently gained substantial attention in organizational study. In the history of organizational studies, both the decision-making and human relations schools have concentrated on the social psychological aspects of organizations (Mouzelis, 1968). This concentration had the merit of focusing on human behavior but the weakness of not considering the organization as an integrated system. Historically, there has also been a tendency to view organizations as closed systems. This tendency mitigated against the study of organizations in relationship to their environments (Katz and Kahn, 1966). Despite these biases, organizational study has not been entirely without a heritage supporting the study of these topics. One common element in the works of Marx, Weber, and Michels was an analysis of bureaucracy which was systematically linked to the social structure as a whole. Unfortunately, these works lacked the rigor and precision of more limited investigation. This difficulty led to over-sweeping generalizations and to ambiguity about how concepts link to social reality (Mouzelis, 1968).

Recent work on the topics of organizational environment and the relation between organization and environment is characterized by more precise conceptualization and greater amounts of empirical data. This work recognizes that the organization and environment are a complex interactive system whose boundaries are not always clear. As pointed out earlier in this paper, Cyert and MacCrimmon (1968) have conceptualized the organization's environment in terms of three levels: aggregate, intermediate, and individual. The intermediate level includes rival organizations, complementary organizations, and organizations with the same members. This level, termed by some investigators as the "interorganizational environment," has received independent attention. There have been a variety of theoretical analyses made at this level. Litwak (1968) has theorized about the relative place of primary groups, voluntary organizations, and bureaucracies. Warren has focused on the various patterns of interaction of community decision-making organizations for the purpose of modeling the process of maximizing disparate values. Kunz (1969) has theorized about the gathered data concerning the relations between sponsoring organizations and the sponsored unit (Boy Scouts). Attention to the individual level is exemplified by Zald's (1967) research on the relationship between environmental characteristics (economic-demographic) of YMCAs and the makeup and effectiveness of their boards of directors.

A different approach to organizational environments has been initiated by Emery and Trist (1966). Work in this tradition represents the most complete and general conceptualization of the causal texture of organizational environments. Emery and Trist developed four ideal types of

environmental causal texture: placid, randomized; placid, clustered; disturbed, reactive; and turbulent fields. Appropriate organizational coping mechanisms with respect to each of the ideal types were specified. The central concept around which these mechanisms revolve was that of "uncertainty" (same concept as shown to be important earlier in this paper). On the basis of this fundamental work, Terreberry (1968) reviews the evidence showing that environments of formal organizations are evolving toward turbulent field conditions. As one of her conclusions she makes the judgment that the rapidity and complexity of change may increasingly preclude effective long-range planning. Following in the steps of Emery and Trist, she emphasizes that uncertainty is the dominant characteristic of turbulent fields.

The relationship between organizations and their environments is getting increasing theoretical and empirical attention. Thompson's (1967) work is illustrative of this theoretical attention. He postulates two dimensions of task environments: homogeneous-heterogeneous and stable-dynamic. In the case of heterogeneous and dynamic environments, he predicts that an organization's boundary-spanning units will be functionally differentiated congruent to divisions in the task environment and each will operate in a decentralized way to monitor and plan responses to changes in its sector of the task environment. Lawrence and Lorsch (1967) have done the most comprehensive research on the relationship between organizations and their environments. They have shown that organizational effectiveness is related to the degree to which the differentiation, integration, and conflict resolution of the organization are congruent with the environmental demands placed upon the organization. The

environmental variables on which they focus are degree of certainty, degree of diversity, and the strategic environmental issue. Lawrence and Lorsch point out that the problem of organization-environment fit is integrally related to organizational management processes. It is up to management to develop the capabilities for monitoring environmental change and making key strategic decisions with respect to such change.

To understand the place of planning as an organizational activity, it is also necessary to focus on the managerial subsystem of the organization. Along with the production subsystem, this subsystem is one of the most central ones in the development of an organization. Focusing on the managerial subsystem facilitates understanding planning in relationship to the development of an organization. Katz and Kahn (1966) have identified as two major types of managerial subsystems "regulatory mechanism" and the "authority structure." Planning as a basic organizational activity is closely related to both types of subsystems.

The systematic use of information for the purposes of guiding a system can be referred to as a regulatory mechanism. When a system operates without such mechanisms, it can be referred to as a "primitive group" (Katz and Kahn, 1966). Such systems can be detected in the early stages of many social organizations. Examples can most readily be found in the early stages of social movements and in the early stages of the formation of voluntary organizations. Katz and Kahn (1966) have chosen to identify voluntary groups as organizations at the point at which the group acquires systematic methods for regulating its activities on the basis of information about its functioning. Operationally, this means a permanent secretariat or equivalent device for maintaining stability

in the offices of secretary and treasurer. In general, regulatory mechanisms vary greatly in their sophistication and complexity. In many profit-making organizations, regulatory mechanisms are highly developed. It is possible for large and complex organizations to employ primitive regulatory systems although the dominant tendency in organizations is toward complexity in regulatory mechanisms.

The systematic use of information to guide organizational functioning has many implications for organizational structure and functioning. The development of these regulatory mechanisms does not occur in isolation from other core organizational mechanisms. Katz and Kahn describe one of the most important of these interdependencies:

> Ordinarily the development processes by which groups acquire a regulatory mechanism and an authority structure are not independent but interactive. With a regulatory mechanism goes the need for decision-making about the uses to which the information will be put. So long as a primitive group can operate in terms of the enthusiasm of its particular adherents at a given time and drop to another level of activity with less motivated followers at another time, it requires only task direction which can be generated within the group itself. But when it moves over to the utilization of information about maintaining some effective ratio of energy input to energy output and some stability in the level of its operations, it needs a more permanent and definitive form of decision-making. Thus, the authority structure grows in response to the development of a regulatory maintenance mechanism (1966, p. 46).

The acquisition of an authority structure leads to demands of particular kinds being made of the regulatory mechanism.

> ...as authority comes to be vested in positions in the group, its exercise is dependent upon information feedback about its functioning. The officers charged with staffing an organization need information about the amount and causes of turnover, and about the kind of people who are lost relative to those who are retained. Some regulatory feedback mechanism is needed to maintain the quantity and quality of personnel which the operations require (ibid., p. 46).

Another of the implications of the development of regulatory mechanisms for the organization is the addition of subsystems to gather information and coordinate it with ongoing activities. An implication which follows from the addition of such subsystems is the development of a role structure which provides for the ongoing activities which, in the aggregate, carry out this task for the organization.

Planning as an organizational activity represents one aspect of organizational regulatory mechanisms. The addition of planning activity to an organization represents an addition to its regulatory mechanisms. As such, it also represents an increase in the complexity of such mechanisms. It turns out that a crucial issue in the development of planning in certain organizations is the question of the level of development of other regulatory mechanisms. This is particularly noticeable in the efforts of voluntary organizations to do long-range planning. These organizations often do not have well-developed regulatory mechanisms, and the attempt to introduce a planning activity in these organizations soon runs into the problem of the lack of ongoing information-gathering capabilities and the lack of a ready linkage between planning processes and the processes for implementation.

An in-depth understanding of the managerial subsystems of an organization (which are integrally involved in planning) demands a knowledge of organizational decision-making. Decision-making as a social system process has received attention earlier in this paper. At this point, decision-making is being focused on because of its centrality to understanding the managerial subsystem of organizations and, in turn, planning in organizations.

In the history of organizational study, the purposive, rational, self-conscious characteristics of organizational behavior have gotten their share of attention. From this perspective, the organization is a system of consciously coordinated activities geared towards the achievement of collective goals. The formal theories of administration first took as their focus the rationalization of the whole structure of the organization (Mouzelis, 1968). It was the intention of these theories to enunciate general principles which would allow the manager to develop a formal structure and proceed to administer his organization in a rational way. Quite frequently in these theories, planning was pointed to as a central process around which principles were developed (Massie, 1965). These theories were normative in character and focused on design and formal rules at the cost of neglecting description of actual organizational processes.

More recently in organizational study, the purposive, rational, consciously coordinated character of organizations has been focused on through the study of decision-making as the central phenomena. Within this approach, the organization is viewed as a decision-making system and as a decision-making unit. We will first look at the topic of the organization as a decision-making system. When the decision-making system is the focus of study, attention is centered on the decision-making centers of organizations and their connections.

The most advanced work which takes this perspective recognizes the dual character of organizations (Thompson, 1967). Earlier in this paper, the dual character of organizations was referred to as fundamental to a

conceptual understanding of organizations in terms of the rational model and the natural system model. Gore, a student of organizations who focuses on decision-making, states:

> The traditional and recently refurbished conception of organization as a rational system of action will coexist with a conception of organization as a social system or as a collective, heuristic strategy (1964, p. 17).

In Gore's estimation, "decision-making" represents a concept for bridging the dual character of organizations.

> At the moment decision-making is one of the concepts that researchers are using to try and link both elements of this duality together. Decision-making is seen not only as a critical kind of administrative act taking place in the rational system of action and in the social system, but also as a process influencing a good deal that takes place in each sphere (1964, p. 17).

Given this understanding of the nature of organizations and the potential of "decision-making" as a concept, Gore's understanding of decision-making is a rich and complex one.

> So, decision-making is not a smooth-flowing process dispensing choices when and where they are required. Rather it is a twisted, unshapely, halting flow of interactions between people, interactions that shift constantly from a rational to a heuristic mode and back again. Sometimes tortuous, sometimes effortless, these interactions face in two directions at once. First, they must maintain a viable ideology as the basis for energizing the undertaking. (People concerned with sustaining an ideology think pragmatically of ways to dispose of neutralizing pressures and destructive tensions which seem bound by no law other than caprice.) Second, they must maintain an elaborate system of action embodying the requirements of logical consistency. (People who seek to program the operations of an organization must honor reason above all else, and especially above emotional pragmatism) (1964, p. 21).

In identifying organizations as having both rational and heuristic systems of action, Gore is also interested in the relation of these systems to the individual.

> Though it is a crude and oversimplified way to put it, possibly the inner stream of organizational processes serves the collectivized part of the inner (by definition, irrational) workings of the individual. The rational system of action, which incidentally shields as well as defines the insulated space inside the organization, serves the collectivized portion of man's conscious needs. Since these inner processes are oriented toward underlying and sometimes even subconscious needs, it is natural to suggest that heuristic processes are both appropriate and largely effective as choice-making mechanisms here. Likewise, rational decisional strategies are appropriate to more or less logically consistent, externally projected purposes set apart from, if not independent of, subconscious motives and the mysterious dynamics of the unconscious (1964, p. 18).

This acknowledgment that man's conscious and unconscious needs are involved in decision-making is congruent with the earlier discussion concerning rationality in organizations.

The question of rationality in organizations as it relates to work on decision-making has given rise to a debate of great relevance to analyses of organizational planning. This is the debate between two disparate models of organizational decision-making: rational-comprehensive (or synoptic) and disjointed-incrementalism (or "muddling through"). For a long time the rational-comprehensive model was in vogue. It was not clear whether this was being advocated as merely a normative model or whether it was thought to describe what actually occurred in organizations. At any rate, this model, as a descriptive model, was attacked by Lindblom (1959) who claimed that the comprehensive rationality, which was the foundation of the earlier model, was not to be found in the actual operations of organizations. He offered disjointed incrementalism as an alternative model. The productive result of Lindblom's work was the calling into question of the adequacy of the rational-comprehensive model for describing what actually occurs in organizations.

Since the time of the original Lindblom critique, debate has continued on the adequacy of the disjointed-incrementalism model. Part of this debate has consisted of the further development of this model (Braybrooke and Lindblom, 1963). Other aspects of the debate have consisted of the development of alternative models to both the rational-comprehensive and disjointed-incrementalism models. Dror has criticized the Lindblom model as assuming three conditions:

> These three essential conditions are: (1) the results of present politics must be in the main satisfactory (to the policy makers and the social strata on which they depend) so that marginal changes are sufficient for achieving an acceptable rate of improvements in policy-results; (2) there must be a high degree of continuity in the nature of the problems; (3) there must be a high degree of continuity in the available means for dealing with problems (1964, p. 154).

Dror argues that these conditions are most readily found in situations of social stability and, therefore, the model of disjointed-incrementalism is not universally applicable.

Dror proposes an alternative which he titles "a normative optimum model for policy making." This model attempts to increase the role of rationality-content in decision-making and, at the same time, acknowledges the role of extra rational processes in policy-making on complex issues. Lindblom (1964) replies to Dror and acknowledges that the model of disjointed-incrementalism is one of less than universal usefulness. He argues, however, that the three conditions specified by Dror as assumptions of the model of disjointed-incrementalism are, in fact, found in the relatively stable social systems of U.S. political democracy and Soviet dictatorship.

The last word in this debate has not yet been heard. In the meantime, work continues on the development of mixed models and the specifications of the conditions under which various subparts of such models are adequate. McCleery (1964) understands the Lindblom model as justified by its close approximation of case-by-case policy-making in successful, administrative agencies. In his eyes, disjointed incrementalism is a model for maximizing agency survival through continuous accomodation to powers impacted by policy. Other models of organizational decision-making are being developed. Gore's heuristic model (1964) is one example of this line of development. In McCleery's words:

> Theories of administrative behavior and communication have gone far in recent years to identify inertia and centrifugal tendencies as facts of organizational life in opposition to traditional normative theory. But the executive's second task of translating ambiguous political directives into operational agency policy, on the other hand, is one which requires a far more sensitive value theory than any now available in the context of administrative scholarship. In the vacuum of a value theory adequate to the ambiguities of the current executive situation, the goal of agency 'survival' rises to the status of a major normative premise (1964, p. 161).

Thompson and his colleagues have taken a somewhat different approach to organizational decision-making. This approach seeks to describe qualitatively different decision-making processes which occur in organizations. They developed a typology of decision-making based on the state of organizational beliefs about causation and the state of organizational preferences about possible outcomes.

BELIEFS ABOUT CAUSATION	PREFERENCES ABOUT POSSIBLE OUTCOMES: AGREEMENT	PREFERENCES ABOUT POSSIBLE OUTCOMES: DISAGREEMENT
AGREEMENT	COMPUTATION	COMPROMISE
DISAGREEMENT	JUDGMENT	INSPIRATION

Thompson and Tuden (1959, p. 198).

In the further work based on this typology, they have described the organizational structure that fits each of the types:

BELIEFS ABOUT CAUSATION	PREFERENCES ABOUT POSSIBLE OUTCOMES: AGREEMENT	PREFERENCES ABOUT POSSIBLE OUTCOMES: DISAGREEMENT
AGREEMENT	COMPUTATION IN BUREAUCRATIC STRUCTURE	BARGAINING IN REPRESENTATIVE STRUCTURE
NONAGREEMENT	MAJORITY JUDGMENT IN COLLEGIAL STRUCTURE	INSPIRATION IN "ANOMIC STRUCTURE"

Thompson and Tuden (1959, p. 204).

This work makes clear their judgment that each of the four types of decision-making requires quite different organizational structures.

Earlier, the point was made that the organization has been viewed both as a decision-making system and as a decision-making unit. Up to this point, our discussion of decision-making in organizations has focused primarily on the organization as a decision-making system. At this point, the organization as a decision-making unit becomes our focus.

It should be noted that this topic has a great deal of overlap with the topic of organization-environment relations. Thompson and McEwen, in looking at the organization as a decision unit, have given attention to the goal-setting process in organizations. They state:

> We have suggested that it is improbable that an organization can continue indefinitely if its goals are formulated arbitrarily, without cognizance of its relations to the environment. One of the requirements for survival appears to be ability to learn about the environment accurately enough and quickly enough to permit organizational adjustments in time to avoid extinction (1958, pp. 29-30).

They have identified competition, bargaining, co-optation, and coalition as four procedures for gaining support from the organizational environment. Each is increasingly costly, in the order named.

Organizational structures are developed to deal with the typical decision problems faced by an organization. Thompson and Tuden state:

> Presumably, the basic structures which prescribe the standing or regular decision units or organizations are established because they are expected to be appropriate for the typical problems those organizations will face. In some organizations, at least, precedent and tradition lead members to expect that all decisions will be made by the decision units and processes established for typical decisions. (1959, p. 206).

The introduction of planning into an organization can force the organization to face untypical decision problems which present the organization with difficulties.

> Thus, the attitudes and expectations of members may make it difficult for organizations to create ad hoc or alternative decision units to deal with problems for which basic, traditional structures are ill-suited (1959, p. 207).

The results are that, most frequently, a change over to planning involves structural changes in relation to decision-making, as well as congruent

changes in the attitudes and expectations of organizational members. Structural changes also frequently imply changes in the distribution of power.

The introduction of planning in organizations affects the organizations' capabilities for dealing with uncertainty. As pointed out by McWhinney (1968), the causal texture of the environment presents the organization with particular challenges with respect to tactics and strategy as well as particular opportunities for reducing uncertainty via decision-making. From the perspective of the organization as a decision-making system, the ability to reduce uncertainty serves as a basis of power to decision centers (Thompson, 1967; Crozier, 1964) which explains how the introduction of planning and attendant structural changes result in changes in the distribution of power.

In this section, the focus has been on organizational structures and processes which are relevant to understanding planning in organizations. This review led to a consideration of the adaptive and managerial subsystems of an organization. In the course of describing these subsystems, special attention was given to the topics of organization-environment relationship and to organizational decision-making.

CONCLUSION

The goal of this paper has been to advance understanding of the phenomena of planning in organizations. In order to do this, it was necessary to begin by focusing first on planning in social systems and then to planning in organizations as a special case of the more general phenomena.

The treatment of the topic, planning in social systems, necessitated focusing first on the definition of planning. With this definition in place, the task became the identification of system conditions conducive to planning and a model of system operations which centered on the processes involved in planning.

A case was then made for the fact that organizations vary with respect to the systemic conditions conducive to planning. The implication of this argument is that different organizations have different potential receptivities for the introduction of planning.

On the basis of this argument and its conclusion, a number of inquiry questions were developed. These questions are seen as being relevant to those researchers and practitioners who are interested in the processes and problems involved in the introduction of planning into organizations.

The final section of the paper outlines a conceptual framework for understanding the organizational structures and processes involved in planning. In addition, special topics were chosen on the basis of their relevance to the conceptual schema that had been developed.

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